

## CLAIMS

What is claimed is:

- 1 1. A system, comprising:  
2 a digital signal processing (DSP) resource manager configured to ensure  
3 DSP availability for each of a number of channels as individual ones of said  
4 channels are activated or deactivated.
- 1 2. A system as in claim 1, wherein various numbers of said channels are  
2 grouped together in a carrier system.
- 1 3. A system as in claim 2, wherein said carrier system is comprised of T1  
2 lines.
- 1 4. A system as in claim 3, wherein the DSP resource manager is configured  
2 to initialize each of a number of T1 lines depending on the availability of DSP  
3 resources.
- 1 5. A system as in claim 1, wherein said channels comprise voice channels.
- 1 6. A system as in claim 1, wherein the DSP resource manager is configured  
2 to ensure DSP availability by controlling allocation of a number of DSP resources  
3 among the activated channels.

1 7. A system as in claim 6, wherein said DSP resources are assigned to DSP  
2 groups according to information compression requests associated with the  
3 activated channels.

1 8. A system as in claim 7, wherein each of said DSP resources is configured  
2 to process one or more of said voice channels depending upon the compression  
3 scheme selected.

1 9. A system as in claim 1, wherein the DSP resource manager is configured  
2 to ensure DSP availability for each of said channels by assigning a sufficient  
3 number of DSP resources to each of a number of DSP groups to process  
4 information transmitted within all activated channels.

1 10. A system as in claim 9, wherein the number of DSP resources assigned to  
2 each of the DSP groups is recalculated each time one of the channels is activated  
3 or deactivated.

1 11. A system as in claim 10, wherein the DSP resources are reallocated  
2 between each of the DSP groups to ensure processing of all activated channels  
3 and to maximize enhanced compression capabilities.

1 12. A method comprising managing a digital signal processing (DSP) system  
2 to ensure DSP availability for each of a number of channels as individual ones of  
3 said channels are activated or deactivated.

1 13. A method as in claim 12, further comprising grouping various number of  
2 said channels together in a carrier system.

1 14. A method as in claim 13, wherein said carrier system is comprised of T1  
2 lines.

1 15. A method as in claim 14, wherein each of a number of T1 lines is  
2 initialized as DSP resources become available.

1 16. A method as claimed in claim 12, wherein ensuring DSP availability  
2 comprises allocating a number of DSP resources among activated ones of the  
3 channels.

1 17. A method as in claim 16, wherein allocation of said DSP resources to DSP  
2 groups is performed by a DSP resource manager according to information  
3 compression requests associated with the activated channels.

1 18. A method as in claim 17, wherein configuring of each of said DSP  
2 resources to process one or more of said activated channels is dependent upon  
3 the compression scheme selected.

1 19. A method as in claim 18, further comprising assigning a sufficient number  
2 of DSP resources to each of a number of DSP groups to process information  
3 transmitted within all activated channels.

1 20. A method as in claim 19, further comprising recalculating the number of  
2 DSP resources assigned to each of the DSP groups is performed by the DSP  
3 resource manager each time one of the channels is activated or deactivated.

1 21. A method as in claim 20, wherein reallocating the DSP resources between  
2 each of the DSP groups by the DSP resource manager, is performed as necessary,  
3 each time a call is activated or deactivated.

SUB A' 1 22. A system comprising:  
2 a plurality of digital signal processing (DSP) resources; and  
3 a DSP resource manager configured to allocate the DSP resources among  
4 DSP resource groups according to requirements of a plurality of channels  
5 utilizing the DSP resources.  
6

1 23. The system as claimed in claim 22 wherein the DSP resource manager  
2 allocates the DSP resources into two or more DSP resource groups.  
3

1 24. The system as claimed in claim 23 wherein the DSP resource manager  
2 allocates sufficient DSP resources to one of the DSP resource groups to process  
3 all of the plurality of channels.  
4

SUB A<sup>2</sup> → 25. The system as claimed in claim 24 wherein one of the DSP resource groups is a compression group comprised of DSP resources which compress voice and data information transmitted over the channels.

26. The system as claimed in claim 25 wherein one of the DSP resource groups is a PCM group comprised of DSP resources which compress the voice and data information using pulse code modulation ("PCM").

27. The system as claimed in claim 26 wherein the PCM group contains sufficient DSP resources to process all of the channels not being processed by the compression group.

28. The system as claimed in claim 23 wherein each of the plurality of channels is comprised of active channels and inactive channels.

29. The system as claimed in claim 28 wherein the DSP resource manager allocates sufficient DSP resources to a first DSP resource group to process all of the active channels not being processed by the remaining DSP resources.

30. The system as claimed in claim 29 wherein the first DSP resource group is a PCM group comprised of DSP resources which perform pulse code modulation.

4

1 31. The system as claimed in claim 30 including a compression group  
2 comprised of DSP resources which compress channels at a higher compression  
3 ratio than DSP resources within the PCM group.

4

1 32. The system as claimed in claim 31 wherein the DSP resource manager  
2 reallocates the number of DSP resources required in the PCM group to process  
3 all active channels not being processed by the remaining DSP resources after one  
4 or more of the channels are inactivated or deactivated.

5

1 33. The system as claimed in claim 32 wherein groups of the plurality of  
2 channels are grouped together in a carrier system.

3

1 34. The system as claimed in claim 33 wherein the carrier system is comprised  
2 of T1 carriers.

3

*Add A<sup>3</sup>*